

What is claimed is:

1.

A carburetor, comprising:

a carburetor body having a fuel and air mixing passage through which air flows and through which fuel is delivered to an engine;

a valve assembly moveable in the fuel and air mixing passage between first and second positions, said valve assembly having a polymeric shaft rotatable relative to the carburetor body, a polymeric cam body connected to the shaft for rotation with the shaft and a valve head in communication with the fuel and air mixing passage and carried by the shaft for rotation with the shaft.

2.

The carburetor of claim 1 wherein the shaft has an elongate slot formed therethrough and the valve head is carried by the shaft within the slot.

3.

The carburetor of claim 2 wherein the valve head has raised tabs which are engagable with the shaft to retain the valve head in the slot.

4.

1 The carburetor of claim 3 wherein the tabs define stop surfaces with at
2 least one stop surface disposed on each of a pair of opposed sides of the shaft in
3 assembly with the distance between the stop surfaces on opposed sides of the shaft
4 being greater than the diameter of the shaft.

5.

1 The carburetor of claim 2 wherein the valve head is generally circular
2 and the slot has a length greater than the diameter of the valve head so that the valve
3 head can shift within the slot generally axially relative to the shaft.

6.

1 The carburetor of claim 5 wherein the length of the slot is at least equal
2 to the diameter of the fuel and air mixing passage with the slot spanning the entire fuel
3 and air mixing passage.

7.

1 The carburetor of claim 1 wherein the cam body is integrally formed
2 with the shaft.

8.

1 The carburetor of claim 1 wherein the cam body is pressed onto the shaft
2 and is retained on the shaft by an interference fit.

9.

1 The carburetor of claim 1 wherein the shaft has a flat surface and the
2 cam body has at least one shoulder which engages the flat surface of the shaft to
3 prevent relative rotation between the shaft and cam body.

10.

1 The carburetor of claim 9 wherein the shaft has another flat surface and
2 the cam body has another shoulder which engages said another flat surface.

11.

1 The carburetor of claim 10 wherein the cam body has four spaced apart
2 shoulders with each flat surface engaged by two shoulders.

12.

1 The carburetor of claim 1 which also comprises a pair of stops carried by
2 the carburetor body and wherein the cam body has a pair of stops each constructed to

engage a separate one of the stops carried by the carburetor body to limit rotation of the valve assembly.

13.

Sub: a3
The carburetor of claim 8 wherein the shaft has a groove formed therein and the cam body has a throughbore and a tab extending into the throughbore with the tab constructed and arranged to be received in the groove when the cam body is fully received on the shaft.

14.

A valve assembly for a carburetor having a body with a fuel and air mixing passage, the valve assembly comprising:

a polymeric shaft rotatably carried by the carburetor body in communication with the fuel and air mixing passage and having a slot formed therethrough between its ends;

a cam body connected to the shaft for co-rotation with the shaft and having a pair of integral stops constructed and arranged to engage stops on the carburetor body to limit rotation of the valve assembly, and

a valve head carried by the shaft for rotation with the shaft, in communication with the fuel and air mixing passage and disposed in part in the slot so

11 that rotation of the shaft changes the orientation of the valve head relative to the fuel
12 and air mixing passage to control fluid flow through the fuel and air mixing passage.

15.

1 The valve assembly of claim 14 wherein the valve head has at least two
2 spaced apart tabs and when assembled to the shaft at least one of said tabs is disposed
3 on each of a pair of opposed sides of the shaft to retain the valve head in the slot and
4 on the shaft.

16.

Sub. 99
2 The carburetor of claim 14 wherein the valve head is generally circular
3 and the slot has a length greater than the diameter of the valve head so that the valve
head can shift within the slot generally axially relative to the shaft.

17.

1 The carburetor of claim 16 wherein the length of the slot is at least equal
2 to the diameter of the fuel and air mixing passage with the slot spanning the entire fuel
3 and air mixing passage.

18.

1 The carburetor of claim 14 wherein the shaft has a flat surface and the
2 cam body has at least one shoulder which engages the flat surface of the shaft to
3 prevent relative rotation between the shaft and cam body.

19.

1 The carburetor of claim 14 wherein the cam body is integrally formed
2 with the shaft.

20.

1 The carburetor of claim 14 wherein the cam body is pressed onto the
2 shaft and is retained on the shaft by an interference fit.

21.

1 The carburetor of claim 20 wherein the shaft has a groove formed
2 therein and the cam body has a throughbore and a tab extending into the throughbore
3 with the tab constructed and arranged to be received in the groove when the cam body
4 is fully received on the shaft.

- 1 The carburetor of claim 14 wherein the shaft has a portion with a non-
2 circular cross-section constructed and arranged to be received in a complimentary non-
3 circular recess in the cam body to prevent relative rotation between the shaft and the
4 cam body.

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